

A NEW SPECIES OF ROBBER FLY OF THE *INSULA* SPECIES GROUP OF *MERODONTINA* ENDERLEIN (DIPTERA: ASILIDAE) FROM VIETNAM¹

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ABSTRACT: A new species of robber fly of the *insula* species group of *Merodontina* Enderlein from Vietnam, *M. bellicosa*, sp. nov., is described, illustrated, and compared with congeners. A key to the regional species of the *insula* species group of *Merodontina*, new locality records of *M. thaiensis* Scarbrough and Hill, and a list of all known species in the genus are included.

KEY WORDS: *Merodontina*, Diptera, Asilidae, Vietnam, new species

The genus *Merodontina* Enderlein (1914) is composed of a small group of *Ommatius*-like robber flies which have a strong dilation of the anterior margin on the apical half of the wing, an acutely pointed first radial cell, and a prominent ventrobasal digitate process on the hind femur of the male. Presently, this genus includes 12 species: five species from India (Joseph and Parui 1998), four from China (Hua 1987, Shi 1991), and three from Southeast Asia (Scarbrough and Hill 2000a, Haupt and Azuma 1997). Based upon our studies of all material except those from China, we recognize two groups based largely on the shapes of the male epandrium. The *sikkim* group is presently limited to India and is characterized by a long, narrow epandrium. The *insula* species group is found in southeastern Asia and Iriomote Island, Japan, and is characterized by an apically capitate epandrium. We describe and illustrate a fourth species of the *insula* group from Vietnam and provide new records of *M. thaiensis* Scarbrough and Hill from Thailand. A list of all known species of the genus and a key to the regional species are also provided.

METHODS

The descriptive terminology and acronyms of museums follow McAlpine (1981) and Arnett et al. (1993), respectively. Specimens for this study were obtained via loans from curators at the following collections: David Grimaldi, American Museum of Natural History, New York (AMNH) and Thomas Pape, Museum of Zoology, University of Copenhagen (ZMUC). Dissection of the terminalia and preparation of illustrations follow Scarbrough and Hill (2000a, b). In recording label data of specimens, each line is denoted by a forward slash (/). All measurements were made of pinned specimens. Structures illustrated in different positions are accompanied by a single scale line.

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Merodontina bellicosa, sp. nov.

Figs 1-6

Male. Body dark brown to black. Measurements, body 21.2 mm; wing 16.7 mm.

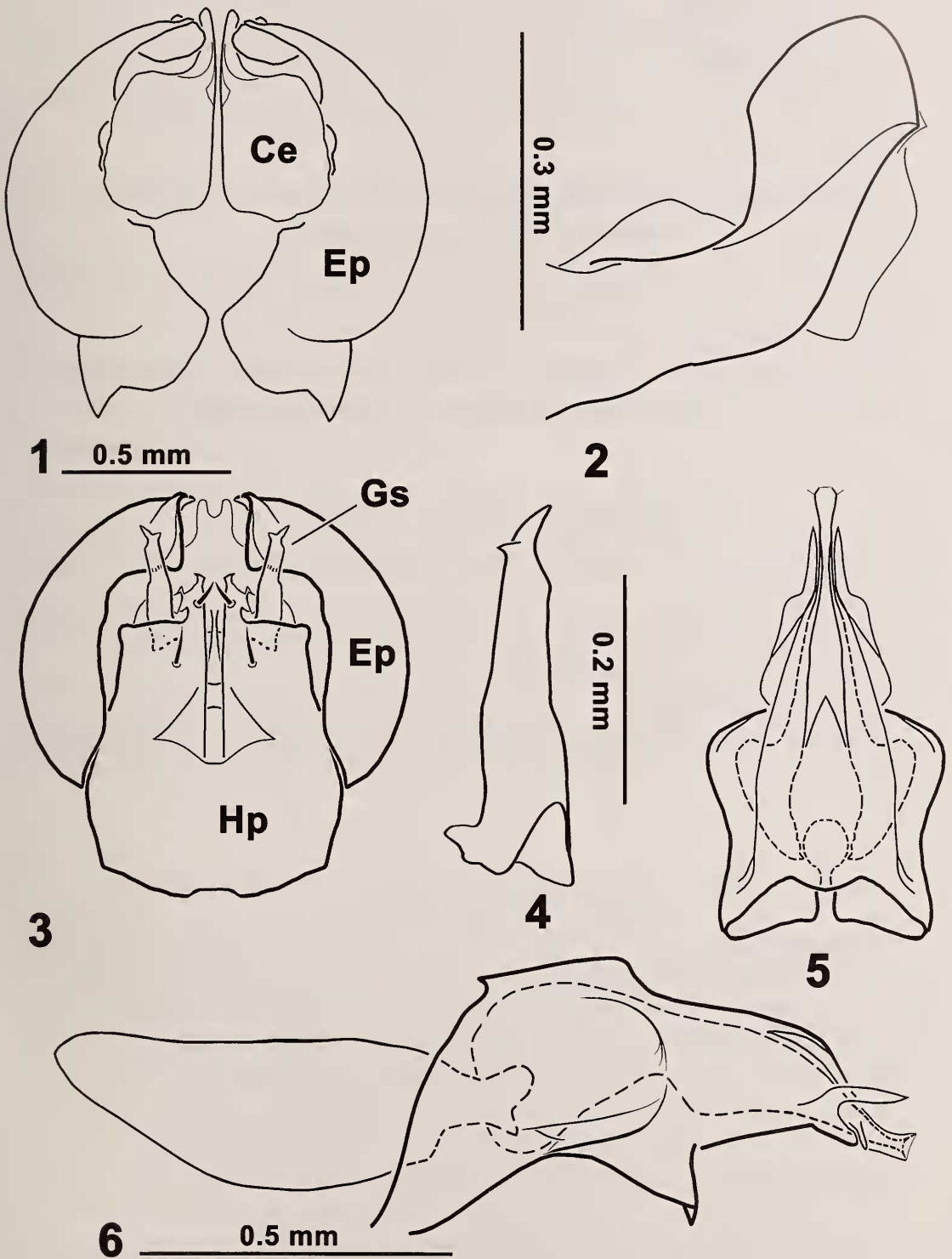
Head. Face and frons yellowish-gray tomentose, vestiture yellow, facial setae long, abundant on ventral half, sparse dorsally; face 1/8.3 as wide as head. Palpus entirely and ocellar tubercle mostly black setose. Proboscis and frons entirely, and antenna mostly yellowish setose, pedicel black setose dorsally. Antenna brown, flagellum twice as long as wide, longer than either scape or pedicel. Ocellar tubercle with longest seta subequal to basal three antennal segments combined. Occiput with five to six black postocular bristles dorsally, longest strongly proclinate, apex about half the distance toward ocellar tubercle.

Thorax. Mesonotum brown tomentose dorsally, two wide, faint paramedial brownish-yellow tomentose stripes present; postpronotal spot, narrow sides, and posterior yellow; dorsal setae short, mostly black, scattered pale yellow setae present anteriorly, laterally, and posteriorly between dorsocentral rows; three dorsocentral and five lateral bristles present, most black, one each yellowish-brown; dorsocentral bristles shorter and thinner than lateral bristles. Scutellum yellow tomentose with scattered yellow setae and four marginal bristles, two blackish, two yellowish-brown; preapical groove present. Pleuron yellow to yellowish-gray tomentose, bristles and setae yellow; anepimeral bristle present. Halter yellow, knob slightly brownish-yellow.

Wing. Strongly dilated beyond middle portion. Costal and r_1 cells brown to brownish; apical two-thirds microtrichose. Cell r_4 triangular, base narrow, sides gradually diverge to apical third, wide and slightly angled posteriorly beyond; base well beyond apex of cell d. Crossvein r-m just before middle of cell d. Cell m_1 wide basally, slightly more than half as wide as cell at basal third, slight constriction present apically. Cell m_3 long, somewhat narrow, CuA_1+M_3 shorter than r-m crossvein, cell apex truncate, just before base of cell m_1 .

Leg. Coxae and trochanters brown; former yellowish-gray tomentose with abundant, long vestiture, none unusually thick. Fore and middle femora mostly yellow, brown to brownish-yellow apically, mostly yellow setose; ventral setae abundant and long, bristles absent; anterior bristles black. Hind femur with apical two-thirds dark brown, basal third yellow; long, thick, digitate process present basoventrally; anteroventral bristles beyond digitate process absent, only long yellow setae present; bristles before digitate process and those in posteroventral row, most or all black. Tibiae mostly yellow, narrow apex of fore and middle tibiae brownish-yellow, apical third of hind tibia dark brown; lateral bristles black except yellow on fore tibia; hind tibia with short, flat, apical bristle. Tarsi mostly black with black bristles; basal tarsomere of fore and middle tarsi mostly yellow.

Abdomen. Dark brown, narrow apical margins yellow; tomentum sparse, dense on segment 1 and base of tergite 2, mostly gray, brownish-gray laterally and ventrally; mostly yellow setose, long on sides of tergites and on all sternites; black setae present on apical 4 tergites medially.



Figures 1-6. Male terminalia of *Merodontina bellicosa* Scarbrough and Constantino, sp. nov. 1. Dorsal view, 2. Apical club of epandrium, 3. Ventral view, 4. Gonostylus, 5-6. Aedeagus, dorsal and lateral views. Abbreviations: Ep=epandrium, Ce=cercus, Gc=gonocoxite, Hp=hypandrium.

Terminalia (Figs 1-6). Epandrium brown, apex bright yellow especially on inner surface and strongly capitate, flat, narrow, projecting dorsally. Gonostylus with bifurcate apex. Gonocoxite with 2 stout black bristles. Hypandrium narrowed, strongly produced apically, apical margin slightly emarginated medially, bare, without vestiture; 2 long, thin, yellow bristles present laterobasally.

Female. Unknown.

Type Data. Holotype M, **VIETNAM:** Ha Tinh Huong, Son 18° 22'N 106° 13' E, 900 m May 5 1998, Malaise AMNH K. Long, AMNH.

Etymology. Latin *bellicosa* for 'warlike or fierce,' and refers to the predaceous habits of this new species.

Distribution. Vietnam.

Remarks. *Merodontina bellicosa* is distinguished from all congeners by the characters in the key and combined characters of the terminalia (Figs 1-6).

Merodontina thaiensis Scarbrough and Hill

Merodontina thaiensis Scarbrough and Hill 2000a: 103. Holotype M, type locality Chieng [=Chiang], Prov. Doi Suthep, UCRC.

New records. THAILAND: 1 M, 1 F, North Thailand Doi Suthep 25.iv.1958 B. Degerbol leg. Pr. (1.7.59), UZMC.

Distribution. Thailand.

Remarks. *Merodontina thaiensis* differs from congeners by the characters in the key.

KEY TO THE *INSULA* SPECIES GROUP OF *MERODONTINA*

1. Mesonotum with a pair of wide yellowish, paramedial tomentose stripes dorsally; coxae with only whitish vestiture; hind femur of male with only 4-5 stout bristles before ventrobasal digitate process; margin of epandrium apically smooth, without small teeth-like process.....2
- Mesonotum entirely brown dorsally, yellowish paramedial stripes absent; coxae with numerous black setae and bristles; hind femur of male with 10-12 stout bristles before digitate process; margin of epandrium apically with only sparse small teeth-like processes, gonostylus with short black bristles posteriorly; Thailand.....*thaiensis* Scarbrough and Hill
2. Epandrial club wide, oval vertically with anterodorsal notch; gonocoxa dorsally with narrow, rectangular process; gonostylus contrastingly wide medially, narrow apically; Iriomote, Japan*insula* Scarbrough and Hill
- Epandrial club narrow vertically, without anterodorsal notch (Fig. 2); gonocoxa simple dorsally, rectangular process absent; gonostylus gradually narrowed from base to apex, not contrastingly wide medially.....3

3. Epandrial club 'T-shaped' with dorsal and ventral extensions; Iriomote, Japan
*silvatica* Haupt and Azuma
 - Epandrial club 'L-shaped,' ventral extension absent; terminalia as in Figs 1-
 6; Vietnam.....*bellicosa*, **sp. nov.**

SPECIES LIST AND GEOGRAPHICAL DISTRIBUTION OF *MERODONTINA* ENDERLEIN

- bellicosa* Scarbrough and Constantino, sp. nov. Vietnam.
carmichaeli (Bromley) 1935: 225. India.
indiana Joseph and Parui 1984: 32. India.
insula Scarbrough and Hill 2000a: 99. Iriomote Island, Japan.
jianfanglingensis Hua 1987: 186. China.
nigripes Shi 1991: 210. China.
obliquata Shi 1991: 211. China.
robusta Ramachandra Rao and Parui 1969: 110. India.
rufirostra Shi 1991: 213. China.
sikkimensis Enderlein 1914: 262. India.
silvatica Haupt and Azuma 1998: 36. Iriomote Island, Japan.
spinulosa Joseph and Parui 1997: 9. India.
thaiensis Scarbrough and Hill 2000a: 103. Thailand.

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